Remarks

Claims 1-53 were pending. Claims 3, 6-9, 27-30, 32-33, 35-37, 39-40, and 42-53 were previously withdrawn from consideration. Claims 1, 2, 4, 5, 10-26, 31, 34, 38, and 41 were elected for examination. Claim 1 has been amended. Claims 25 and 26 have been canceled without prejudice or disclaimer. Support for the claim amendments can be found in the specification, for example, at page 23, line 16 – page 24, line 6, and the Examples shown in Figs. 12-15. Accordingly, Claims 1, 2, 4, 5, 10-24, 31, 34, 38, and 41 are now pending.

Based on the following remarks, Applicants respectfully request reconsideration of the outstanding rejections and passage of the claims to allowance.

§ 102 Rejections

Claims 1-2, 4-5, 11-15, 18, 20, 22-23, 25-26, 31, 34 and 38 were rejected under 35 USC § 102(b) as being anticipated by Gibbons et al (U.S. Pat. No. 6,242,061). Applicants respectfully respond as follows.

Gibbons does not disclose "exposing an alignment material to an interference pattern having uniform intensity formed from two beams having circular polarization states of opposite handedness to cause a chemical reaction in the alignment material" as is recited in claim 1. Instead, Gibbons teaches that exposing "may be accomplished using interference of coherent optical beams forming patterns, i.e., alternating dark and bright lines." See Gibbons, col. 10, lines 17-19. In addition, Gibbons teaches: "At least one of the steps must consist of exposure with linearly polarized light." See Gibbons, col. 10, lines 23-25. In contrast, an exemplary embodiment of the present application shows, for example (see e.g., Fig. 12), an interference pattern formed from two beams having circular polarization states of opposite handedness, not linearly polarized light.

Accordingly, Gibbons does not disclose the recited exposing step. For at least the reasons above, the rejection of claims 1-2, 4-5, 11-15, 18, 20, 22-23, 31, 34 and 38 under 35 USC § 102(b) as being anticipated by Gibbons et al has been overcome and should be withdrawn. Regarding claims 25 and 26, the rejection is moot, as those claims have been canceled without prejudice or disclaimer.

§ 103 Rejections

Claims 10 and 21 were rejected under 35 USC § 103(a) as being unpatentable over Gibbons et al in view of Yamada et al (U.S. Pat. No. 6,067,141). Claims 16 and 17 were rejected under 35 USC § 103(a) as being unpatentable over Gibbons et al in view of Noh (U.S. Pat. No. 5,929,957). Further, claim 19 was rejected under 35 USC § 103(a) as being unpatentable over Gibbons et al. Claim 24 was rejected under 35 USC § 103(a) as being unpatentable over Gibbons et al in view of Hirata et al (U.S. Pat. No. 5,652,634). Claim 41 was rejected under 35 USC § 103(a) as being unpatentable over Gibbons et al in view of Kelsey et al (U.S. Publ. No. US 2002/0169849).

The Yamada, Hirata, and Kelsey references were cited in the previous two office actions. Applicants addressed those references in their remarks dated 9/22/05 and 3/13/06. Applicants hereby incorporate those remarks by reference.

Applicants traverse for the following reasons – the cited references, either taken alone or in combination do not teach or suggest the claimed method, in particular, "exposing an alignment material to an interference pattern having uniform intensity formed from two beams having circular polarization states of opposite handedness to cause a chemical reaction in the alignment material." Moreover, the cited secondary references do not overcome the deficiencies of Gibbons. Specifically, Gibbons explicitly teaches away from the claimed invention, in that Gibbons requires that: "At least one of the steps must consist of exposure with linearly polarized light." See Gibbons, col. 10, lines 23-25 (emphasis added). In contrast, the claimed invention recites two beams having circular polarization states of opposite handedness. Accordingly, one of ordinary skill in the art at the time of the invention would not have been motivated to have modified Gibbons' method to expose "an alignment material to an interference pattern having uniform intensity formed from two beams having circular polarization states of opposite handedness" because Gibbons requires an exposure by linearly polarized light.

For at least the reasons stated above, the cited references, either taken alone, or in combination, do not teach or suggest the features recited in the pending claims. As such, Applicants respectfully submit that the pending claims are patentable over the cited references.

Conclusion

In view of the above, it is submitted that the application is in condition for allowance. Reconsideration of the application is requested. Please contact the undersigned should there be any questions or in order to expedite prosecution.

Respectfully submitted,

8-14-06
Date

By: _____
Gregg H. Rosenblatt, Reg. No.: 45,056
Telephone No.: (512) 984-7443

Office of Intellectual Property Counsel
3M Innovative Properties Company
Facsimile No.: 651-736-3833